

# Delta Simulation Model 2

## improvements/extension for sediment & mercury

DSM2 User Group  
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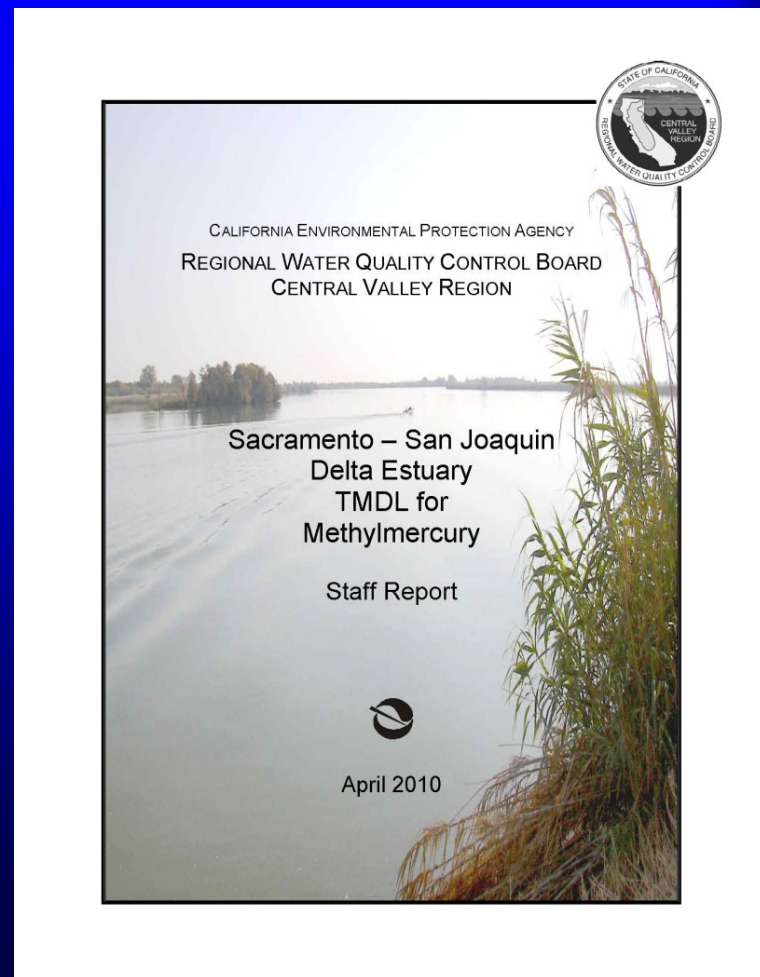


Department of Water Resources  
Modeling Support Branch  
Bay-Delta Office

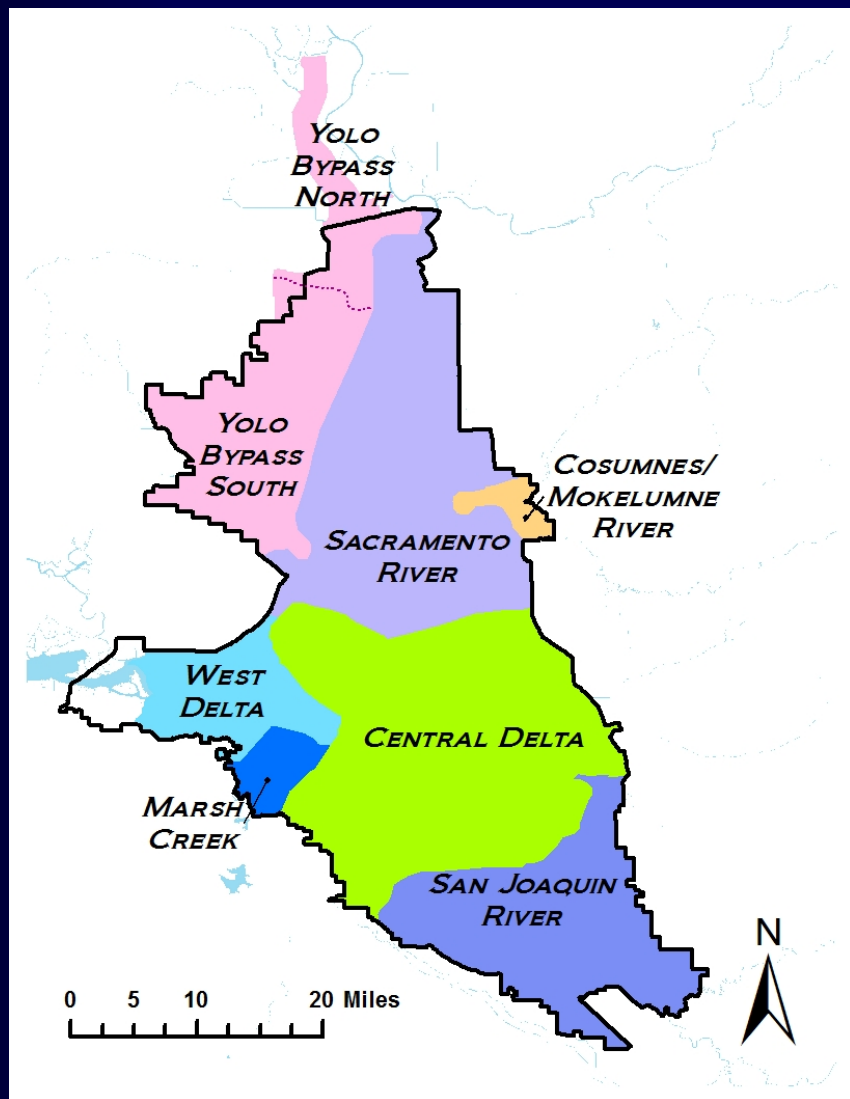


# Delta Mercury Total Maximum Daily Load (TMDL)

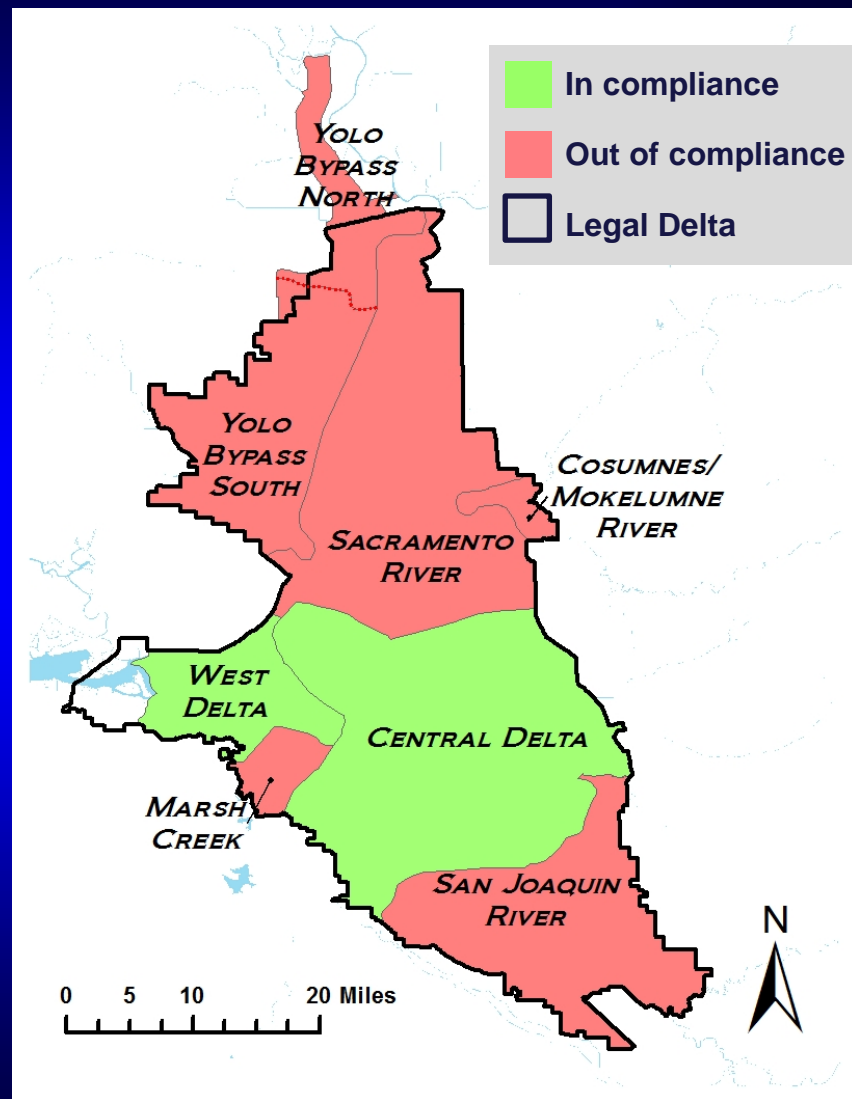
- **1990** Sacramento-SJ Delta listed as impaired for fish consumption due to mercury [Clean Water Act 303 (d) list]
- **2010** Regional Water Quality Control Board adopted amendments to the Sacramento River and San Joaquin River Basin Plan to establish the **Delta Mercury Control Program** which establish Total Maximum Daily Loads (TMDL) for mercury in the Delta
- **2011** US EPA approved the TMDL and DWR is required to comply with the TMDL



# What areas are affected by the TMDL?

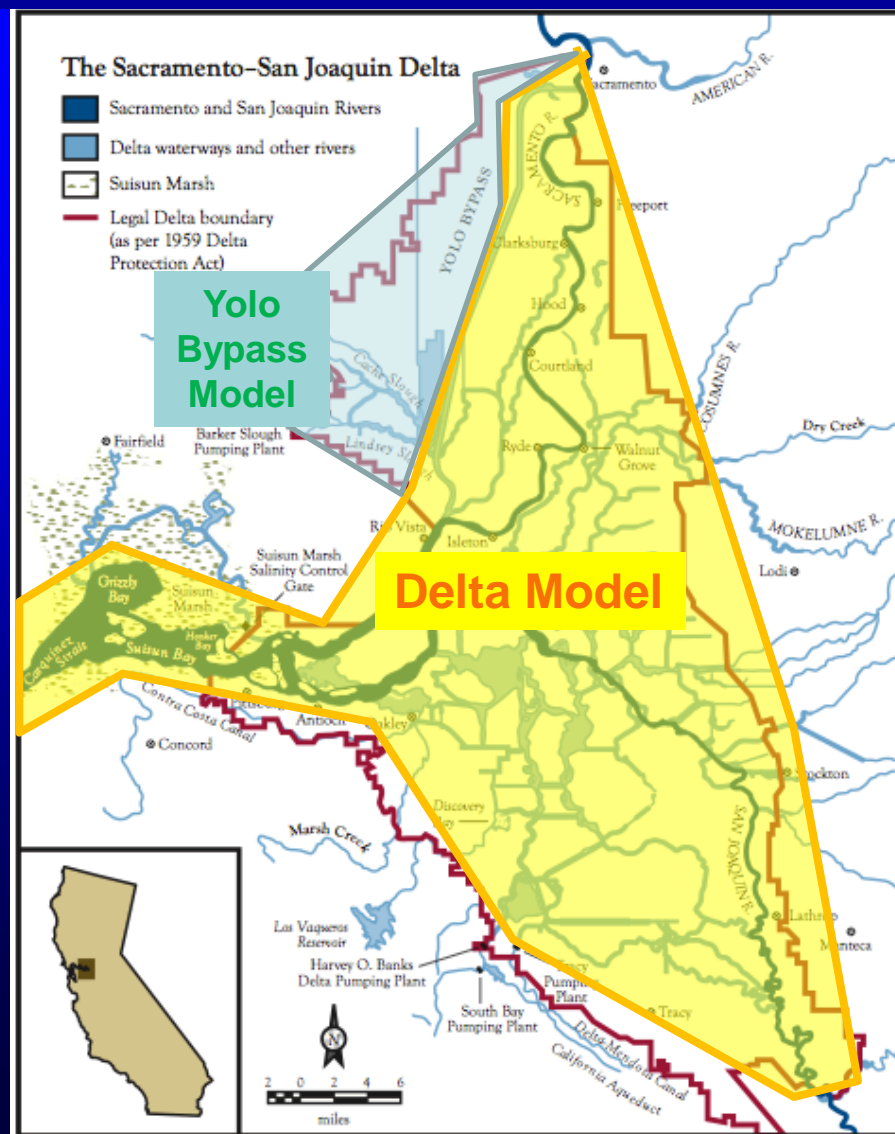


# What areas require load reductions?



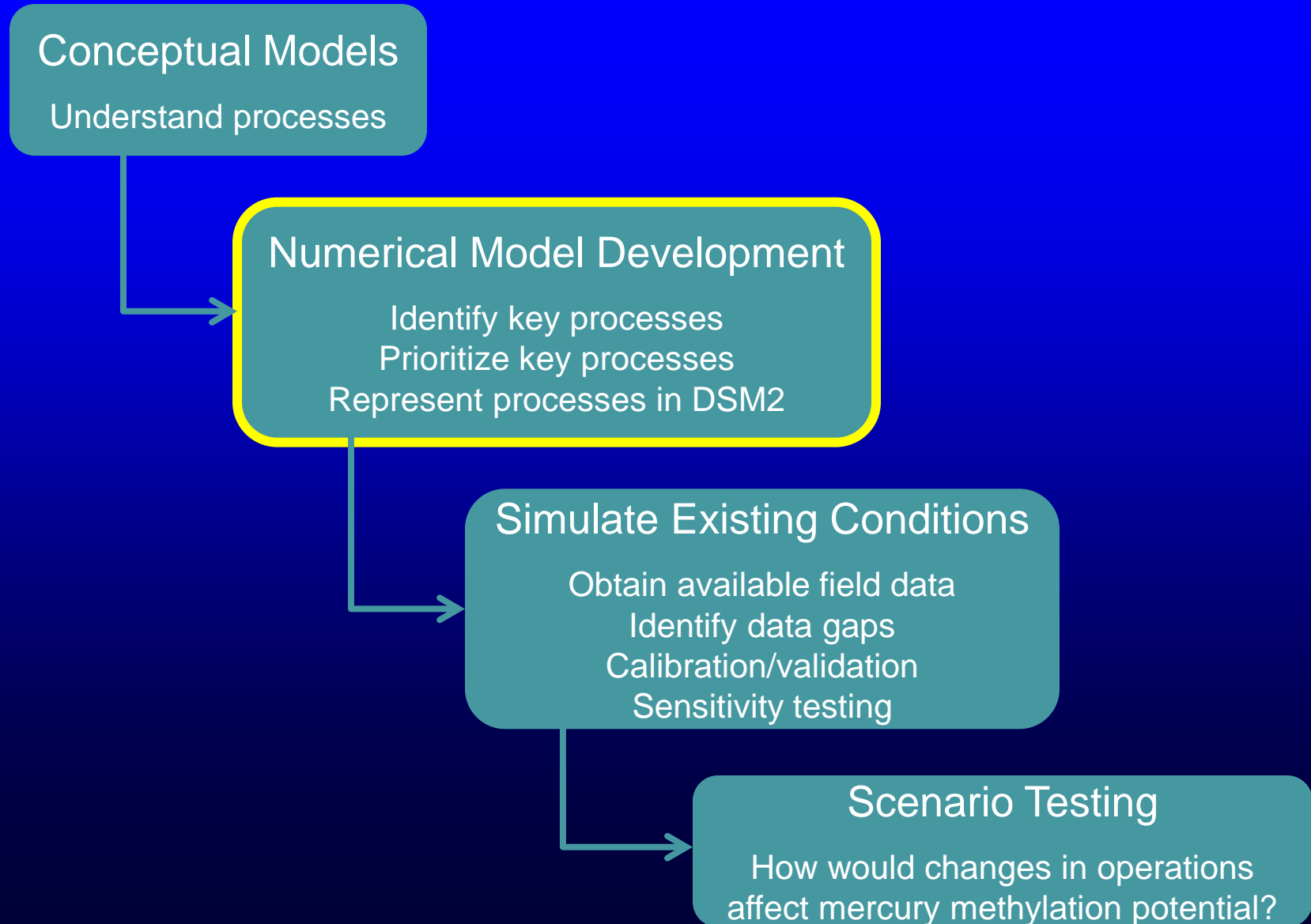
# Modeling Objectives to Support Hg TMDL

- Two models are being developed
  - Yolo Bypass
  - Delta Open Waters
- Goal: assess impacts of current & proposed operational changes on mercury methylation potential
  - Water management
  - Flood conveyance



Highlighted areas are approximate

# Modeling Approach



# Extending DSM2 for Sediment & Mercury

DWR Delta Modeling Staff

Reed Harris Environmental Ltd

Upgrade DSM2 water  
quality with new GTM  
(General Transport Model)

Develop Mercury  
Cycling Code

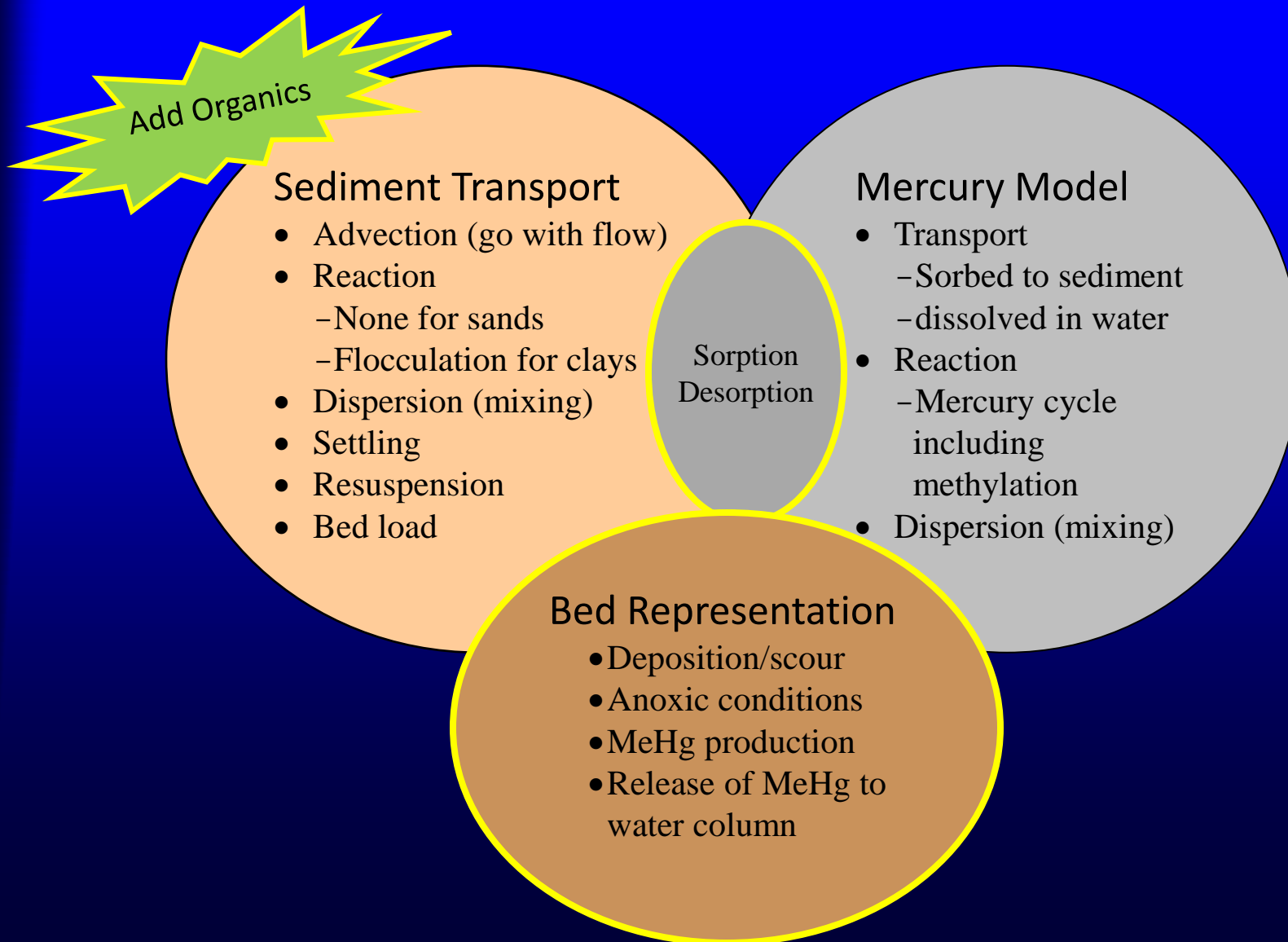
Add  
Sediment  
Transport

Add new  
Water Quality  
constituents  
if needed

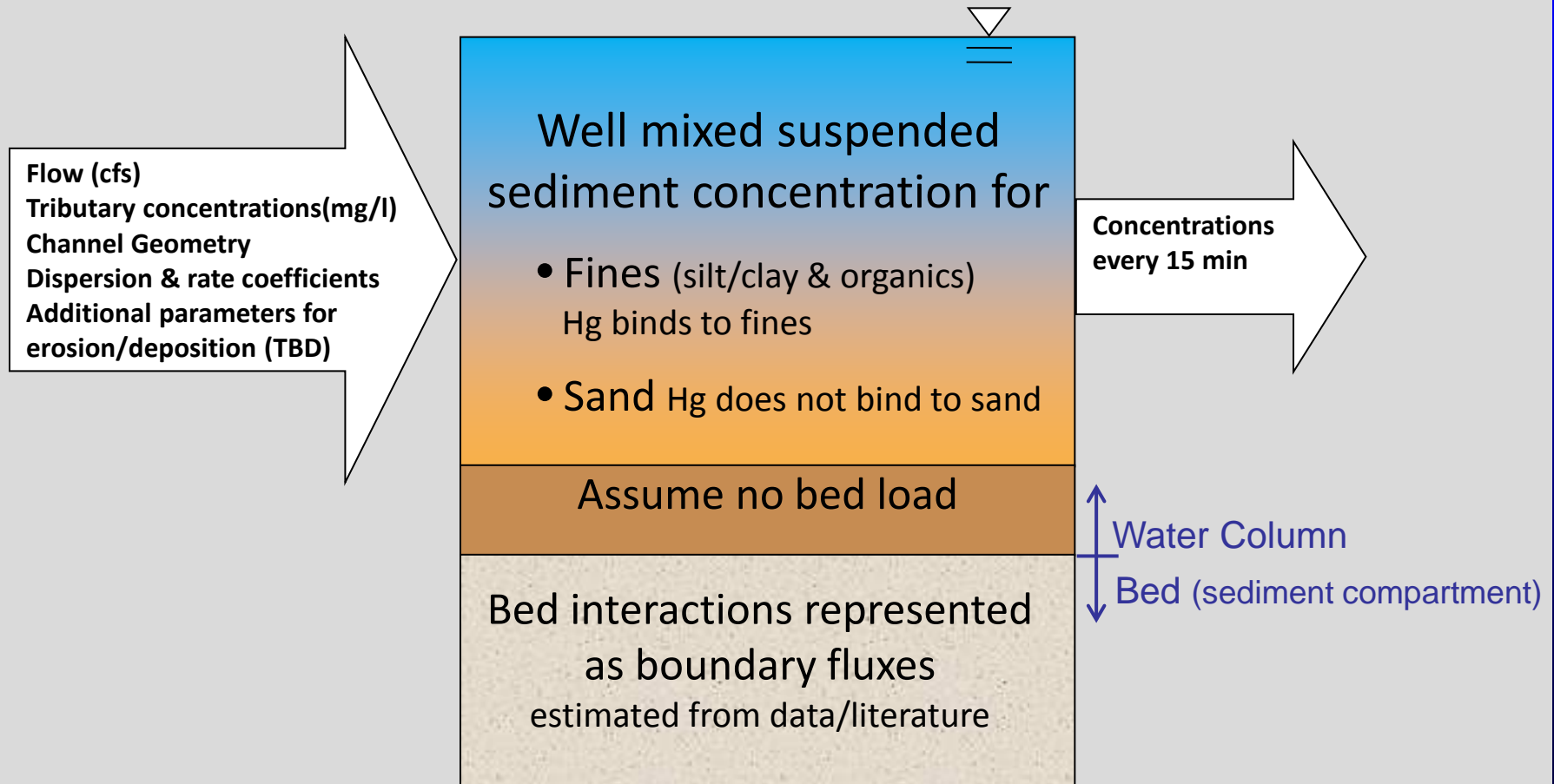
Link GTM with Mercury  
Cycling Model

Test  
Calibrate  
Apply

# Previously planned Sediment Transport Model may not cover all important processes for mercury



# Initial Model Development: focus on Water Column





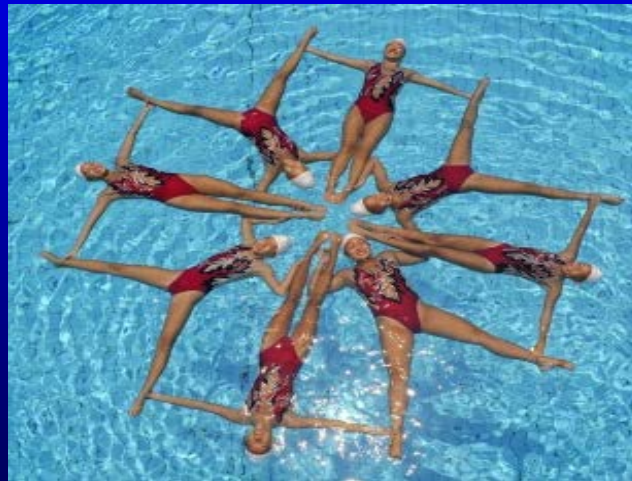
# DSM2 Sediment and Mercury Model Status

Where we are now



Research & code development

Where we are going



Model Integration



Calibration/Validation



# Thank You!

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